

Listing of Claims

The following listing of claims replaces any pending claims. Inserted text is shown as underlined ("___") and deleted text is shown as stricken ("—").

1. (Original) A method for processing a TiN layer on a substrate, comprising:
 - (a) providing a substrate;
 - (b) depositing a TiN layer with a halogen containing titanium source gas and a nitrogen source gas on said substrate in a first process chamber; and
 - (c) subjecting the TiN layer to a plasma treatment involving a N-containing gas.
2. (Original) The method of claim 1 wherein said nitrogen source gas is NH_3 .
3. (Original) The method of claim 1 wherein said halogen containing titanium source gas is TiCl_4 .
4. (Original) The method of claim 1 wherein said deposition is a chemical vapor deposition.
5. (Original) The method of claim 1 wherein the plasma treatment is performed ex-situ in a second process chamber.
6. (Original) The method of claim 1 wherein said plasma treatment comprises a N-containing gas flow rate of 500 to 2000 sccm, a chamber temperature between about 500° C. and 700° C., a RF power from about 400 Watts to 1000 Watts, a chamber pressure of about 1 to 10 Torr, and a process time of at least 30 seconds.
7. (Original) The method of claim 6 wherein said N-containing gas is one of N_2 , NH_3 , or N_2H_4 .
8. (Original) The method of claim 7 further comprised of adding H_2 to N_2 during the plasma treatment.

9. (Original) The method of claim 1 further comprised of depositing a metal layer on the TiN layer after the plasma treatment and planarizing to form a contact.

10. - 30. Canceled.